



Fax (802) 658-7665

Burlington Fire Department Office of the City Fire Marshal

132 NORTH AVENUE • BURLINGTON, VERMONT 05401

CITY FIRE MARSHAL

FIRE ALARM/SPRINKLER PLAN REVIEW
INSPECTION SERVICES

(802) 864-5577

PUBLIC INFORMATION & EDUCATION

(802) 864-6923



(TTY) (802) 865-7142

Master Radio Call Box Information and Programming Protocols

The Vermont Fire and Building Safety Code require that a Master Radio Call Box (MRCB) be installed as part of the fire alarm system for this building. This unit is a discreet FM radio transmitter that automatically notifies the Burlington Emergency Communication Center (BECC) as soon as your fire protection systems are activated (e.g.: the presence of smoke in a detector or the activation of a sprinkler head). This system is a vital part of your building's life safety and property protection systems. Each MRCB can monitor and report a total of sixteen alarm functions.

The property owner shall purchase and install the MRCB in accordance with this document. A start up fee of \$550 is charged by the Fire Department to conduct pre- installation and post installation site surveys, a commissioning test, and an inspection of your MRCB installation. This site work typically requires 4 hours of staff time.

As both the MRCB and receiving station consoles in the BECC utilize microprocessors, these processors must be initialized and programmed. Two hours of the City's Alarm Technician's time is included in this start up fee for computer programming.

Note: The owner or contractor may choose to use an authorized third party MRCB technician for MRCB installation and start-up. Although the authorized third - party technicians can install and start up a MRCB, they are not authorized to conduct pre-site inspections for antenna placement or to program the MRCB alarm receiving console computers at the BECC. When a third party installs and starts the MRCB, the Fire Dept. charges a fee of \$150 for the antenna placement inspection and for programming the alarm receiving console.

City MRCB technician: Lance Desautels (cell) 802-316-0386

Authorized third party MRCB technicians:

Dave Gratton, Gratton Electrical Services (Bu.) 802-453-7877 (cell) 802-343-0612

██████████, Omega Electric Construction (Bu.) 802-862-0517 (cell) 802-373-1114

Any additional work done by the Alarm Technician, beyond this two hour allotment, shall be reimbursed at a rate of \$75/hour, and is payable at the time the service is rendered. If any travel time is incurred to complete this additional work, travel time from the office to the site and back to the office shall be included as part of the additional hours worked. Checks are payable to the Burlington Fire Department.

Important Note: The system will not be activated until all accounts receivable have been settled. All fire alarm components, including the MRCB are required to be active before the building is allowed to be occupied. In addition to the fees listed above, the City assesses an annual monitoring fee of \$550. This fee is accessed beginning July 1 of each year.

Purchasing the Master Radio Call Box (MRCB):

You are to purchase a Sig.-Com Model DTX-16 from: **L.W. Bills Co. PO Box 7 Georgetown., MA. 01833 (Ph. 978-352-6660)**. Allow a 6-8 week lead time when ordering. The MRCB requires an installation kit be purchased as well. Please check the installation kit to be sure that a wall or roof mounting bracket (as applicable), antenna, 100' of RG-213U cable, a crossover cable, and a packet of 20K resistors are in the shipping box, as these items are required to correctly install the box. (see attachments)

Location of MRCB:

The MRCB shall be located in a fire resistive compartment with a minimum rating of one hour. The MRCB shall be located within 75 feet of the antenna base. (This distance is measured from the antenna base connection to the top of the MRCB). The MRCB shall be mounted on a substantial wood backer for surface mount, or may be flush mounted and secured in a stud cavity. The MRCB shall be mounted at a height of 4-6 feet, as measured from the top of the box to the finished floor. No extraneous holes shall be drilled in the MRCB as this will violate the UL F/M listings. The MRCB shall be unobstructed and shall comply with the National Electric Code, Article 110.26 for clearances.

Antenna:

The location of the MRCB antenna shall be determined by the City's Alarm Technician during the pre-installation site visit. This location is critical to the operation of the MRCB and shall not be subject to aesthetic considerations. It is imperative that the owner provide full disclosure of any planned obstructions near the antenna site that might interfere with the signal output of the MRCB.

The preferred antenna location is a roof mount and shall be a minimum of 20' away from any roof mounted equipment or obstruction. Antenna base shall not be less than 3' above any roof parapet flashing.

The antenna wire shall be run in a **continuous, dedicated 3/4" galvanized rigid pipe (for exterior applications) or EMT (for interior applications) from the base of the antenna to the top left side** of the MRCB. Maximum antenna cable run shall not exceed 75' as measured from the base of the antenna to the MRCB. Junction/pull boxes for the antenna wire shall be a minimum of 4 11/16" X 4 11/16" X 2 1/8". Antenna cable shall not be coiled in the junction/pull box. "LR", "LL" or "pull L" fittings or "C" fittings shall not be used in the antenna conduit. All junction/pull box covers shall be painted red and shall be labeled as "MRCB Antenna Cable".

A/C Power for MRCB:

Romex cable shall not be used. Where exposed, A/C power shall be run in a continuous dedicated 3/4" rigid pipe conduit. MC cable (12/2 solid copper conductor) may be used in concealed stud spaces. All A/C wire shall enter the MRCB on the **right side** of the box at the knock out. When possible, the MRCB and FACP shall share the same A/C circuit and be protected by 20 Amp circuit breaker with lock-out. The circuit shall be identified in the electrical panel by a permanent red blaze on the panel cover adjacent to the breaker(s) powering the FACP and MRCB. The electrical panel designation, physical location(s), and breaker number(s) shall be listed on the inside cover of the Fire Alarm Control Panel (FACP). There shall be no splices in any of the conductors.

The MRCB shall not have AC or DC power established until the Alarm Technician is on site. Improper power-up will damage sensitive circuit boards and could cause false alarm/interference and may be subject to fine and/or penalties pursuant to BCO 13. .

Fire Alarm Control Panel (FACP) - MRCB Connection:

Fire alarm wiring from the FACP to the MRCB shall run in a dedicated, continuous 3/4" EMT rigid pipe. Each zone shall be either a 16 ga. or 18 ga. solid copper conductors between the FACP and MRCB zone terminals. There shall be no splices in the conductors between or in the panels.

Fire Alarm Control Panel(s):

FACP(s) shall be accessed by a CAT 30 key. A listing of the MRCB zones shall be posted inside the FACP panel cover. The electrical panel designation, physical location(s), and breaker number(s) shall be listed on the inside cover of the Fire Alarm Control Panel (FACP). The Burlington Emergency Communications Center (BECC) non-emergency phone number and MRCB box number shall be posted on the inside cover of the FACP.

Knox Box:

A special fire department, hinged door, key vault shall be installed (surface or flush mount) on the exterior of the building at the door that has direct access to the FACP or remote annunciator. Two building master keys shall be kept in this vault. The Knox box may be ordered at www.knoxbox.com.

MRCB Programming Information Sheet:

The attached programming sheet shall be completed by the building owner. All emergency contact information shall be completed and include 24 hour contact numbers. The fire protection contractors shall forward the programming sheet to both the Fire Marshal's Office (658-7665) and the Alarm Technician (864-8513) for final review, a minimum of one week prior to the final test and inspection of the Fire Protection systems.

MRCB Disconnect Procedures:

The owner is responsible for coordinating all work on the fire protection systems. It may be necessary to conduct work on a fire protection system that requires specific zones in the MRCB to be taken off line to avoid accidental alarm activation.

Individual MRCB zones may be taken off line by calling the BECC non-emergency line (864-5311). The person calling the MRCB zone(s) out of service shall provide the dispatcher with the contact information. **Failure to provide this critical information constitutes unauthorized work on a fire protection system, and constitute a violation of state law. Such violation could result in civil and criminal charges. In addition, this office may refuse to issue future fire protection permits to the responsible party.**

Any alarms received by BECC as a result of unauthorized work are subject to the fees and penalties outlined in the Burlington Code of Ordinances, section 13-20.

Pursuant to NFPA 72, no alarm function of a system may be off for more than 4 hours without an approved, independent, dedicated fire watch being established. Fire watch contact information (fire watch personnel names and cell numbers) shall be provided to the BECC before the fire watch is established. **At no time shall all zones in the MRCB be taken off line without expressed written approval of the Fire Marshal's Office. Annual testing a Fire protection system by a technically qualified person shall not require such approval.**

This document does not supersede or exclude other provisions in the Vermont State Fire and Building Safety Code.

(MRCB installation protocol 7/10)



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Date: 06/06/07

To: All Fire Alarm Technicians

Re: Radio Master Box Zone Requirements

Where the requirement for a fire alarm system to notify the Burlington Fire Department within the NFPA Codes, the following zones shall be monitored by the Burlington Fire Department as a policy. Furthermore, any system that is now non compliant with this policy shall upgrade to meet this policy when any work is required or requested on the fire alarm system.

Zones Reporting:

1. General Alarm.
2. Fire Alarm Trouble
3. Sprinkler Water Flow
4. Sprinkler Supervisory
5. Carbon Monoxide Alarm (CO)
6. Speciality suppression system alarm (Ansul)

Other zones may also be required to be monitored by the Radio Master Box such as:

- High/Low pressure alarm for Dry Sprinkler systems.
- Fire pump functions
- Floor designation.
- Special extinguishing systems such as an Intergon gas system.

Any fire suppression system shall remain on-line during renovation/remodeling. Suppression systems may be tied directly to the MRCB to prevent supervisory alarm or false alarms when the FACP is out of service for an extended period of time. Written permission is required from this Office prior to direct connection to a MRCB or taking any life safety system off line for more than 4 hours pursuant to NFPA 72.

(revis. from 07-02-98)
(MRCB zone rptng)

Master Radio Call Box Information and Programming Protocols
Signatory Sheet

Please fill in the information below and return by fax (802-658-7661) or USPS to the Fire Marshal's Office.

I have read the MRCB information and programming protocols and shall follow all of the requirements listed there-in. I understand that failure to follow these protocols may result in a non-compliant installation and subsequent a non-compliant fire alarm installation resulting in failure of a critical component in the FACP acceptance test witnessed by the Fire Marshal's Office.

I will ensure that the General contract for the project receives a copy of these protocols and further understands that any alarms sent from the project because of failure to follow the MRCB disconnect procedures are subject to civil and/or criminal penalties as stated in BCO Chapter 13 and the State of Vermont Fire and Building Safety Code.

Project description or FMO Permit # : _____

Date: _____

Signature: _____

Please Print Name Clearly: _____

Representing Company: _____

NEW / UPDATED RADIO CALL BOX REPORT

INSTALLING CONTRACTOR: _____ PHONE: _____

Building owner information:

BUILDING NAME: _____	
ADDRESS: _____	
DAYTIME PHONE : _____ (Preferably a direct line to a receptionist or someone in charge)	
BUILDING OWNER: _____	PHONE: _____
ADDRESS: _____	
OWNERS BILLING INFORMATION: _____	PHONE: _____
ADDRESS: _____	
EMERGENCY CONTACTS (These are people located in the region that are available after hours in case of an emergency)	
NAME: _____	PHONE: _____
NAME: _____	PHONE: _____
NAME: _____	PHONE: _____

BOX NUMBER: _____	ONLINE DATE: _____	UPDATED: _____	A	S
ZONE 1: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 2: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 3: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 4: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 5: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 6: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 7: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 8: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE9: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 10: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 11: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 12: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 13: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 14: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 15: _____			<input type="checkbox"/>	<input type="checkbox"/>
ZONE 16: _____			<input type="checkbox"/>	<input type="checkbox"/>
KNOX BOX LOCATION: _____				

FAX COMPLETED FORM TO BOTH: (802)-658-7665 & (802)-864-8513

COPIES TO: FIRE MARSHAL/BSD ALARM TECH/DISPATCH/ADMINISTRATION OFFICE/BATTALION CHIEFS

FIRE DEPARTMENT USE ONLY:

1 ST ALARM: _____
2 ND ALARM: _____
CROSS STREETS: _____
PROGRAMMING FEE PAID: YES / NO DATE: _____